

C L A I M S

1. A key-operated remotely monitorable locking assembly comprising:
a key-operated lock including:
a lock body including a key operated locking assembly; and
a tamper monitorable lockable assembly which is selectably locked to the lock body by operation of said mechanical key operated locking assembly; and
a wireless communication circuit located in at least one of said lock body and said lockable assembly for providing a remotely monitorable indication of tampering with said lockable assembly.
2. A key-operated remotely monitorable locking assembly according to claim 1 and wherein said wireless communication circuit is also operative for providing a remotely monitorable indication of at least one of locking and unlocking said lockable assembly to said lock body.
3. A key-operated remotely monitorable locking assembly according to either of claims 1 and 2 and wherein said wireless communication circuit is also operative for providing a remotely monitorable indication of at least one of presence and absence of said lockable assembly within said lock body.
4. A key operated remotely monitorable locking assembly according any of the preceding claims and wherein said tamper monitorable lockable assembly comprises a flexible sealing wire assembly.
5. A key operated remotely monitorable locking assembly according to any of the preceding claims and wherein said key operated locking assembly is operated by at least one of a mechanical key, an electronic key and a combined mechanical-electronic key.
6. A key operated remotely monitorable locking assembly according to any of the preceding claims and wherein said tamper monitorable lockable assembly includes at

least one conductor disposed about a retaining element, said conductor being monitored by said wireless communication circuit.

7. A key operated remotely monitorable locking assembly according to any of the preceding claims and also comprising at least one monitorable element disposed within said lock body and at least one detector operative to monitor the presence of said monitorable element at a predetermined location within said lock body.

8. A key operated remotely monitorable locking assembly according to claim 7 and wherein said monitorable element comprises a magnet.

9. A key operated remotely monitorable locking assembly according to either of claims 7 and 8 and wherein said detector comprises a reed switch.

10. A key operated remotely monitorable locking assembly according to either of claims 7 and 8 and wherein said detector comprises an RFID sensor.

11. A key operated remotely monitorable locking assembly according to any of the preceding claims and wherein said tamper monitorable lockable assembly is entirely removable from said lock body.

12. A key operated remotely monitorable locking assembly according to any of claims 1 – 10 and wherein said tamper monitorable lockable assembly is tethered at one side thereof to said lock body.

13. A key operated remotely monitorable locking assembly according to any of the preceding claims and wherein said wireless communication circuit is operative provide a wireless indication if said tamper monitorable lockable assembly is unlocked from said lock body prior to receipt of wireless authorization by said wireless communication circuit.

14. A key-operated remotely monitorable locking assembly according to any of the preceding claims and also comprising a key insertion sensor operative to sense whether a key is operatively inserted in said key operated locking assembly and wherein said wireless communication circuit is also operative for providing a remotely monitorable indication of at least one of key insertion or the absence thereof.

15. A monitorable shipping container assembly comprising:
a shipping container body;
a remotely monitorable locking assembly comprising:
a lock including:
a lock body; and
a tamper monitorable lockable assembly which is selectably locked to the lock body; and
a wireless communication circuit located in at least one of said lock body and said lockable assembly for providing a remotely monitorable indication of tampering with said lockable assembly; and
a support on the exterior of said shipping container body for removably supporting said locking assembly onto said shipping container body; and
a support sensor for sensing when said locking assembly is located on said support,
wherein said wireless communication circuit is also operative for providing a remotely monitorable indication responsive to an output of said sensor indicating whether said locking assembly is located on said support.

16. A monitorable shipping container assembly according to claim 15 and wherein said wireless communication circuit is also operative for providing a remotely monitorable indication of at least one of locking and unlocking said lockable assembly to said lock body.

17. A monitorable shipping container assembly according to either of claims 15 and 16 and wherein said remotely monitorable locking assembly is a key operated locking assembly.

18. A monitorable shipping container assembly according to any of claims 15 - 17 and wherein said remotely monitorable locking assembly also comprises a key insertion sensor operative to sense whether a key is operatively inserted in said locking assembly and wherein said wireless communication circuit is also operative for providing a remotely monitorable indication of at least one of key insertion or the absence thereof.

19. A monitorable shipping container assembly according to any of claims 15 – 18 and wherein said tamper monitorable lockable assembly comprises a flexible sealing wire assembly.

20. A monitorable shipping container assembly according to any of claims 15 – 19 and wherein said tamper monitorable lockable assembly comprises a shackle assembly.

21. A monitorable shipping container assembly according to any of claims 17 – 20 and wherein said key operated locking assembly is operated by at least one of a mechanical key, an electronic key and a combined mechanical-electronic key.

22. A monitorable shipping container assembly according to any of claims 15 – 21 and wherein said tamper monitorable lockable assembly includes at least one conductor disposed about a retaining element, said conductor being monitorable by said wireless communication circuit.

23. A monitorable shipping container assembly according to any of claims 15 – 22 and wherein said remotely monitorable locking assembly also comprises at least one monitorable element disposed within said lock body and at least one detector operative to monitor the presence of said monitorable element at a predetermined location within said lock body.

24. A monitorable shipping container assembly according to claim 23 and wherein said monitorable element comprises a magnet.

25. A monitorable shipping container assembly according to either of claims 23 and 24 and wherein said detector comprises a reed switch.
26. A monitorable shipping container assembly according to either of claims 23 and 24 and wherein said detector comprises an RFID sensor.
27. A monitorable shipping container assembly according to any of claims 15 – 26 and wherein said support sensor comprises a magnet sensor.
28. A monitorable shipping container assembly according to any of claims 15 – 26 and wherein said support sensor comprises an RFID sensor.
29. A monitorable shipping container assembly according to any of claims 15 – 26 and wherein said support sensor comprises a reed switch.
30. A remotely monitorable closure assembly comprising:
a closure assembly arranged for mounting on a first closure element and including:
a closure body;
a closure pin fixedly mounted onto said closure body; and
a wireless communication circuit located in said closure body for providing a remotely monitorable indication of tampering with said closure assembly; and
a closure pin receiver arranged for mounting on a second closure element cooperative with said first closure element, said closure pin receiver having at least a pin securing operative orientation and a pin releasing operative orientation.
31. A remotely monitorable closure assembly according to claim 30 and also comprising a key-operated lock associated with said closure pin receiver and being operative for selectably locking said closure pin receiver in said pin securing operative orientation.

32. A remotely monitorable closure assembly according to either of claims 30 and 31 and wherein said first and second closure elements are first and second doors which may be secured in a closed mutual orientation by said closure assembly.

33. A remotely monitorable closure assembly according to either of claims 30 and 31 and wherein said first and second closure elements are hatch portions of a tanker which may be secured in a closed mutual orientation by said closure assembly.

34. A remotely monitorable closure assembly according to either of claims 30 and 31 and wherein said first and second closure elements are output valve access elements of a tanker which may be secured in a closed mutual orientation by said closure assembly.

35. A remotely monitorable closure assembly according to any of claims 30 – 34 and also comprising a mounting element fixed to said first closure element and wherein said closure body is mounted onto said mounting element.

36. A remotely monitorable closure assembly according to any of claims 30 – 35 and wherein said closure pin includes at least one conductor forming an electrical circuit, said electrical circuit being operative to provide indication of tampering to with said closure assembly to said wireless communication circuit.

37. A remotely monitorable closure assembly according to any of claims 30 – 36 and wherein said closure pin receiver also comprises at least one monitorable element operative to provide said wireless communication circuit with sensed information for monitoring the presence of closure pin at a predetermined location within said closure pin receiver.

38. A remotely monitorable closure assembly according claim 37 and wherein said monitorable element comprises at least one magnet.

39. A remotely monitorable closure assembly according to any of claims 30 – 38 and wherein said wireless communication circuit is also operative for providing a remotely monitorable indication of at least one of said pin securing operative orientation and said pin releasing operative orientation.

40. A remotely monitorable closure assembly according to any of claims 30 – 39 and wherein shifting of said closure pin receiver between said pin securing operative orientation and said pin releasing operative orientation is governed by a spring loaded retaining assembly.

41. A remotely monitorable closure assembly according to any of claims 30 – 39 and wherein shifting of said closure pin receiver between said pin securing operative orientation and said pin releasing operative orientation is governed by a rotation of a mechanical key disposed within said closure pin receiver.

42. A remotely monitorable closure assembly according to any of claims 30 – 41 and also comprising at least one pin receiver retaining element operative to retain a movable portion of said closure pin receiver within a remainder of said closure pin receiver.

43. A remote visual identification system comprising:
a controller; and
a plurality of wirelessly addressable displaceable visual indicators, each comprising:
a mounting element;
a selectably displaceable visual indicator mounted onto said mounting element;
an individually addressable visual indicator displacement assembly operative to selectably displace said visual indicator; and
a wireless communicator associated with said displacement assembly and operative to receive operational signals from said controller.

44. A remote visual identification system according to claim 43 and wherein said displacement assembly comprises:

a motor control circuit;

a motor controlled by said motor controlled circuit; and

a transmission controlled by said motor and being operative to position said visual indicator.

45. A remote visual identification system according to either of claims 43 and 44 wherein said visual indicator is selectably displaceable between an inoperative orientation and a visually indicating orientation by said motor and said transmission.